

VersaMax Micro PLC Expansion Unit  
Unité d'extension  
Erweiterungsmodul  
Unità di espansione  
Unidad de expansión  
点扩展单元  
拡張ユニット

Mounting Dimensions and Spacing Requirements

Cotes de Montage et Contraintes d'Espace

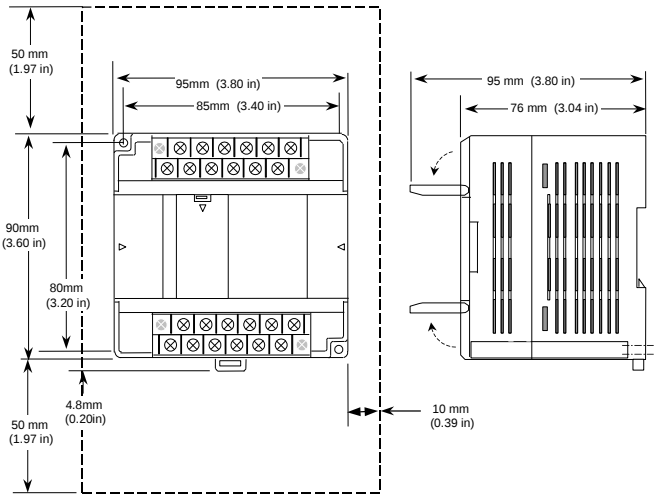
Montage- und Abstandsmaße

Dimensioni di montaggio e requisiti di spazio

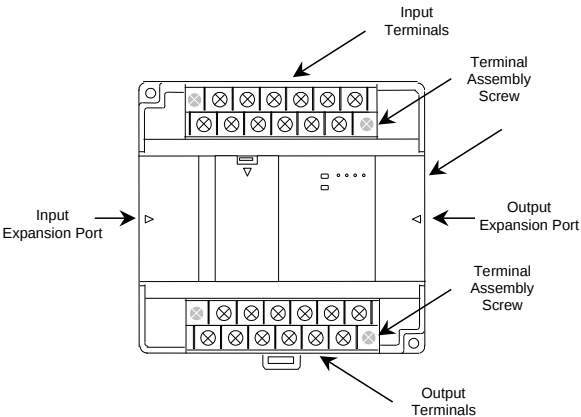
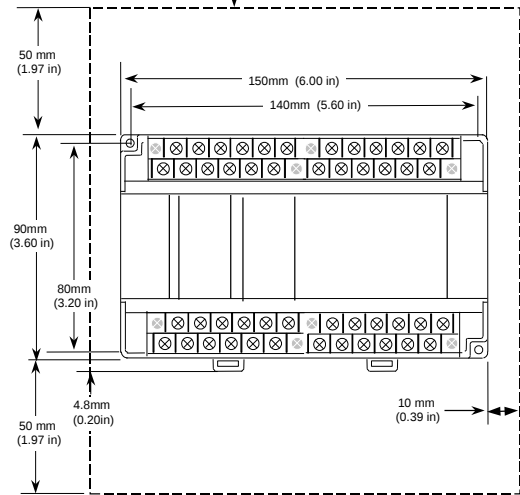
Dimensiones de montaje y espacio necesario

組立尺寸和距离要求

取り付け寸法及び設置に必要な空間の寸法



Minimum allowance for cooling  
Dégagement d'aération  
Minimalabstände zur Kühlung  
Spazio per il raffreddamento  
Margen para enfriamiento  
最小冷却間隙  
冷却に最低限必要な寸法



Installation

Up to four Expansion Units can be connected to one Micro PLC.

The Expansion Unit can be mounted on a wall or panel using screws, or on a DIN rail. The Expansion Unit must be mounted on a vertical surface. Do not mount it on a horizontal surface.

**CAUTION:** Power down the Micro PLC before connecting the Expansion Unit. Connecting the Expansion Unit with the Micro PLC powered up could damage the expansion unit or cause the base unit to malfunction.

The Expansion Unit's input expansion port must be connected to the output expansion port of the base Micro PLC (or another expansion unit). Connecting the unit in the reverse position could damage the Expansion Unit.

The 34-pin ribbon cable provided with the Expansion Unit has keyed connectors to prevent incorrect connection. Powering up the system with the cable improperly installed could damage the Expansion Unit.

Installation

Il est possible de connecter en série jusqu' à quatre unités d'extension à un Micro PLC.

L'Unité d'extension peut être vissée sur un mur ou un panneau, ou bien montée sur un rail DIN. L'Unité d'extension doit être montée sur une surface verticale. Ne jamais la monter sur une surface horizontale.

**Attention:** Mettez le Micro PLC hors tension avant de connecter l'Unité d'extension. So vous essayez de connecter l'Unité d'extension lorsque le Micro PLC est sous tension, vous risquez d'endommager celle-ci ou de provoquer une défaillance de l'unité centrale.

La port d'entrée de l'Unité d'extension doit être connecte au porte de sortie de l'unité d'extension de l'unité centrale programmable (ou à autre unité d'extension). Si vous connectez l'unité en position inversée, vous risquez d'endommager l'Unité d'extension.

La nappe de connexion pour 34 broches prévue pour l'Unité d'extension es dotée de connecteurs codés pour éviter une connexion inpropre. La mise sous tension du système avec un cable mal installé pourrait endommader l'Unité d'extension.

Installation

Das Erweiterungsmodul kann auf eine Montageplatte oder eine DIN-Schiene befestigt werden. Die Erweiterung muß vertikal montiert werden. Eine horizontale Montage ist nicht zulässig.

**Vorsicht:** Schalten Sie dasMicro SPS Grundgerät ab, bevor Sie eine Erweiterung anschließen. Wenn Sie das Erweiterungsmodul bie eingeschaltetem Grundgerät anschließen, könne Schäden an beiden Geräten entstehen.

Das Auschlußkabel der Erweiterung muß an den dafür vorgesehenen Anschlußsteckern des Basisgerätes bzw, weiterer Erweiterungsmodule angeschlossen werden. Wird das Erweiterungsmodul umgekehrt angeschlossen, können Schaden an der Erweiterung entstehen.

Die Stifte am 34-Pin Flachbandkabel wurden so Bezeichnet, daß ein falscher Anschluß vermieden werden kann. Wird das Kabel falsch installiert und das System eingeschaltet, so kann die Erweiterungseinheit beschädigt werden.

Yes  
Oui  
Ja  
Sì  
允许  
正しい

No  
Non  
Nein  
No  
No  
不允许  
誤り

Base Unit  
Unité centrale  
Basisgerät  
Unità di base  
Unidad base  
点基本单元  
点基本ユニット

Expansion Unit  
Unité d'extension  
Expansionsgerät  
Unità di espansione  
Unidad de expansión  
点扩展单元  
拡張ユニット

34-Pin Ribbon Connector  
Nappe de connexion pour 34 broches  
34-Stift Bandanschluss  
Connettore a 34 pin a nastro  
Cinta conectora de 34 puntos  
34插脚带状连接器  
34ピン フラット ケーブル

34 Pin Connector for Next Expansion Unit (4 max)  
Connecteur à 34 broches pour future unité d'extension (4 max.)  
34-Stift Anschluss für das nächste Expansionsgerät (max. 4)  
4 Connettore a 34 pin a nastro per l'unità di espansione successiva (4 max)  
Conector de 34 puntos para la próxima Unidad de Expansión (máximo de 4)  
用于下一级扩展单元的34插脚连接器 (最多4个)  
次の拡張ユニット(最大4ユニット)のための34ピン コネクタ

Bottom  
Dessous  
Unterseite  
Fondo  
Parte inferior  
底部  
下

Bottom  
Dessous  
Unterseite  
Fondo  
Parte inferior  
底部  
下

Top  
Dessus  
Oberseite  
Parte superiore  
顶部  
上

### Installazione

Si possono collegare fino a quattro Unità di espansione a un Micro PLC.

L'Unità di espansione può essere montata con delle viti su una parete o su un pannello, oppure su una guida DIN. L'Unità di espansione deve essere montata su una superficie verticale. Non montatela su una superficie orizzontale.

**Attenzione:** Spegner il Micro PLC prima di collegare l'unità di espansione. Il collegamento dell'unità di espansione con il Micro PLC acceso può danneggiare l'unità di espansione o causare anomalie di funzionamento dell'unità di base.

La porta di espansione di unput dell'unità di espansione deve essere collegata alla porta di espansione dell'output del Micro PLC di base (o di un'altra unità di espansione). Il collegamento dell'unità nella posizione inversa può danneggiare l'unità di espansione.

Il cavo a nastro a 34 pin fornito con l'Unità di espansione è dotato di connettori predisposti in modo tale da evitare il collegamento non corretto. L'accensione del sistema con il cavo installato in modo inidoneo può danneggiare l'Unità di espansione.

### Instalacion

Pueden conectarse hasta cuatro Unidades de Expansión en serie a un Micro PLC.

La Unidad de Expansión se puede montar en una pared o un panel, utilizando tornillos, o bien en un riel DIN. La Unidad de Expansión se debe montar en una superficie vertical. No montarla en una superficie horizontal.

**Caución:** Corte la alimentación eléctrica del Micro PLC antes de conectar la Unidad de Expansión. Conectar la Unidad de Expansión con la alimentación eléctrica del Micro PLC activa, podría dañar la unidad de expansión u ocasionar un desperfecto en la unidad base.

El acceso de la expansión de entrada de la Unidad de Expansión tiene que estar conectado al acceso de la expansión de salida del Micro PLC base (o a otra unidad de expansión). Conectar la unidad en la posición inversa puede dañar la Unidad de Expansión.

El cable plano de 34 espigas que viene con la Unidad de Expansión tiene conectores manipulados para evitar la conexión incorrecta. Activar la alimentación eléctrica del sistema con el cable instalado indebidamente puede dañar la Unidad de Expansión.

### 取り付け方法

基本ユニット1個に対して最大4個までの拡張ユニットが接続可能です。

拡張ユニットは壁やパネルに、またはDINレールにおじを使って取り付けすることができます。

拡張 ユニツトは必ず垂直面に取り付けること。水平面に取り付けてはなりません。

**注意** 拡張ユニットを取り付ける前に基本ユニットの電源を切ること。

基本ユニットに電源を入れたまま、拡張ユニットを接続すると、拡張ユニットが壊れたり、基本ユニットが動作不良を起こします。

拡張ユニットの入力拡張ポートは基本ユニット (または他の拡張ユニット) の出力拡張ポートに接続します。図3に示すように、逆向きにユニットを接続すると、拡張ユニットや基本ユニットが壊れることがあります。

拡張ユニットに付属している34ピン・フラット・ケーブルは接続の向きを間違えないようにして下さい。ケーブルの接続を間違えたまま電源を入れると拡張ユニットや基本ユニットが壊れることがあります。

### 安装

一个微型 PLC上可以串连多达四个扩展单元。

扩展单元可以用螺丝装在墙上或面板上,或装在一个DIN导轨上。

扩展单元必须安装在垂直的平面上,的平面上,切勿将其安装在水平面上。

**警告** 连接扩展单元前,必须切断微型PLC的电源。

微型PLC带电时连接扩展单元,将会损坏扩展单元,或导致基本单元失灵。

扩展单元的输入扩展插槽必须与基本微型PLC (或另一个扩展单元) 的输出扩展插槽相联。单元 反相接线 (见图3) 会损坏扩展单元。

随扩展单元提供的34-插脚的带状电缆有带钥匙的连接器,以防止连接错误。如果在电缆接线错误的情况下接通电源,将损坏扩展单元。

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| <p><b>Field Wiring</b></p> <p>Each terminal can accept solid or stranded wires. However, the wires into any given terminal should be of the same type and size.</p> <p><b>Warning:</b> The Micro PLC must be grounded to minimize electrical shock hazard. Failure to do so could result in injury to personnel.</p> <p><b>Warning:</b> You should calculate the maximum current for each wire and observe proper wiring practices. Failure to do so could cause injury to personnel or damage to equipment.</p> <p><b>Caution:</b> When connecting stranded conductors, insure that there are no projecting strands of wire. These could cause a short circuit, damaging equipment or causing it to malfunction.</p> <ul style="list-style-type: none"><li>Use copper conductors rated for 75° (167°F) for all wiring. You can use one AWG #14 (2.1mm<sup>2</sup>) copper conductor or two smaller copper conductors – AWG #16 (1.3mm<sup>2</sup>) through AWG#22 (0.36mm<sup>2</sup>) – per terminal.</li><li>The suggested torque for terminal connections is 0.6Nm.</li><li>Turn off power to the PLC before connecting field wiring.</li><li>All low-level signal wires should be run separately from other field wiring.</li><li>AC power wiring should be run separately from DC field wiring.</li><li>Field wiring should not be routed close to any device that could be a potential source of electrical interference. If severe noise problems are present, additional power supply filtering or an isolation transformer may be required.</li><li>Label all wires to and from I/O devices.</li></ul>                                                                                                                                                                                                                              | <p><b>Procedura di Cablaggio</b></p> <p>Per ciascun terminale può essere impiegato un filo rigido o a treccia, fermo restando che il filo collegato a un dato terminale deve essere dello stesso tipo e dimensioni.</p> <p><b>Attenzione:</b> Il Micro PLC deve essere messo a terra per ridurre al minimo il pericolo di scosse elettriche. L'inosservanza di questa misura precauzionale può causare gravi danni alla persona. Calcolare la corrente massima per ogni cavo e seguire le appropriate procedure di cablaggio. L'inosservanza di queste misure può causare gravi danni alla persona e al controllore.</p> <p><b>Attenzione:</b> Quando si collegano conduttori a treccia, assicurarsi che non vi siano fili sporgenti, per evitare il rischio di un colto circuito e conseguenti danni o difetti di funzionamento.</p> <ul style="list-style-type: none"><li>Impiegare sempre ed esclusivamente conduttori di rame con temperatura di funzionamento nominale di 75°C (167°F). Per ciascun terminale si può usare un unico conduttore di rame AWG 14 (2,1mm<sup>2</sup>) o due conduttori di rame di sezione minore, compresi tra AWG 16 (1.3mm<sup>2</sup>) e AWG 22 (0,36mm<sup>2</sup>).</li><li>Il momento torcente consigliato per tutti i terminali è 0,6Nm.</li><li>Spegnere il PLC prima di collegare i circuiti.</li><li>Tutti i cavi dei segnali di basso livello devono essere stesi separatamente dagli altri circuiti.</li><li>I circuiti d'alimentazione CA devono essere stesi separatamente dagli altri circuiti CC.</li><li>I circuiti non devono essere cablati vicino a dispositivi che possono costituire una potenziale fonte d'interferenze elettriche. Se si verificano gravi problemi di disturbo, può darsi che sia necessario usare ulteriore filtraggio dell'alimentatore o un trasformatore d'isolamento.</li><li>Etichettare tutti i cavi a/dai dispositivi di I/O.</li></ul>                                                                                                                                |
| <p><b>Cableado de campo</b></p> <p>Cada terminal puede recibir cable macizo o retorcido. Sin Embargo, los cables a cualquier terminal deben ser del mismo tipo y tamaño.</p> <p><b>Advertencia:</b> El Micro PLC deberá estar conectado a tierra para minimizar los riesgos de descargas eléctricas. El no hacerlo así podría dar como consecuencia lesiones personales.</p> <p>Deberá calcular la corriente máxima para cada conductor y observar las prácticas apropiadas de cableado. El no hacerlo así podría dar como consecuencia lesiones personales o daños en los equipos.</p> <p><b>Caución:</b> Cuando esté conectando conductores retorcidos, asegúrese de que no hayan hilos de cable sueltos. Estos podrían causar un corto circuito, daño al equipo o mal funcionamiento del mismo.</p> <ul style="list-style-type: none"><li>Use conductores de cobre indicados para 75°C (167°F) para todo el cableado. Puede usar un conductor de cobre AWG 14 (2.1mm2) o dos conductores de cobre más pequeños AWG 16 (1.3mm2) a AWG 22 (0.36mm2) por terminal.</li><li>Se sugiere in par de 0.6Nm para todas las conexiones de los terminales.</li><li>Corte la alimentación eléctrica al PLC antes de conectar el cableado sobre el terreno.</li><li>Todos los cables de señal de nivel bajo se deberán tender por separado de otros cables de campo.</li><li>El cableado de alimentación de corriente alterna deberá tenderse por separado del cableado de campo de corriente continua.</li><li>Los cables de campo no se deberán encauzar cerca de ningún dispositivo que pudiera ser fuente de interferencias. Si existen problemas graves de ruido, pueden requerirse un filtrado adicional de la fuente de alimentación eléctrica o un transformador de aislamiento.</li><li>Rotule todos los cables de entrada y salida.</li></ul> | <p><b>Câblage du champ</b></p> <p>Chaque borne peut recevoir des fils lisses ou torsadés. Toutefois, les fils reliés à une même borne doivent tous être de taille et de type identiques.</p> <p><b>Attention:</b> L'automate doit être relié à la terre afin de réduire les risques d'électrocution. Le non-respect de cette précaution peut entraîner des dommages corporels.</p> <p><b>Attention:</b> Il est impératif de calculer l'intensité maximale du courant devant circuler dans chaque fil et d'effectuer le câblage en conséquence. Le non-respect des règles de câblage peut entraîner des dommages corporels ou matériels.</p> <p><b>Avertissement:</b> En cas d'utilisation de fils torsadés, assurez-vous que tous les brins sont bien connectés. Un brin dépassant de la connexion pourrait en effet provoquer un court-circuit, endommager l'appareil ou entraîner un mauvais fonctionnement.</p> <ul style="list-style-type: none"><li>Pour tous les câblages, utilisez des fils de cuivre homologués pour une température de 75C (167F). Pour chaque borne, vous pouvez utiliser soit un fil de cuivre de 2.1mm2 de section (AWG No.14), soit deux fils de cuivre de 0,86mm2 (AWG No.16) a 1,3mm2 (AWG No. 22) de section chacun.</li><li>Le couple de serrage recommandé pour toutes les bornes de connexion est de 0,6Nm.</li><li>Coupez l'alimentation électrique de l'Automate avant de commencer le câblage du champ.</li><li>Tous les fils de commande bas niveau doivent être amenés séparément du reste du câblage procédé.</li><li>Les circuits de puissance en courant alternatif doivent être amenés séparément des câblages en courant continu.</li><li>Le câblage procédé doit être éloigné de tout appareil susceptible d'être une source d'interférences électriques. Si d'importants problèmes d'interférences subsistent, il peut être nécessaire d'installer un système de filtrage d'alimentation supplémentaire, voire un transformateur d'isolement.</li><li>Etiqueter tous les fils d'entrée/sortie.</li></ul> |
| <p><b>Feldverdrahtung</b></p> <p>Jede der Anschlußklemmen kann sowohl Volldraht als auch Litzendraht aufnehmen. Die Drähte einer Anschlußklemme sollten jedoch vom gleichen Typ und von gleicher Stärke sein.</p> <p><b>Warnung:</b> Die Micro PLC muß geerdet werden, um Gefahr vor elektrischem Schock zu vermeiden. Unterlassung kann zu Verletzungen führen.</p> <p>Die maximale Stromaufnahme muß für jedes Kabel berechnet und vorschriftsmäßige Verdrahtung beachtet werden. Nicht befolgen kann zu Verletzungen von Personen oder zur Beschädigung der Anlage führen.</p> <p><b>Vorsicht:</b> Bei der Verwendung von Litzendraht darauf achten, daß an der Anschlußstelle keine Drahtadern vorstehen, da dies zu Kurzschlüssen bzw. zur Beschädigung oder zu Funktionsstörungen des Geräts führen kann.</p> <ul style="list-style-type: none"><li>Für alle Verdrahtung für 75°C ausgelegten Kupferdraht verwenden. Pro Anschlußklemme sind entweder ein AWG #14 Kupferdraht (2,1mm<sup>2</sup>) oder zwei kleinere Kupferdrähte – zwischen AWG #16 (1,3mm<sup>2</sup>) und AWG #22 (0,36mm<sup>2</sup>) – zulässig.</li><li>Das empfohlene Drehmoment für all Anschlußklemmen beträgt 0,6Nm.</li><li>Vor Anschluß der Feldverdrahtung, muß die Versorgungsspannung abgeschaltet werden.Schwachstrom sollte von Starkstromverdrahtung getrennt verlegt werden.</li><li>Wechsel- und Gleichstromverdrahtung sollten getrennt verlegt werden.</li><li>Feldverdrahtung sollte nicht in der Nähe von Apparaturen verlegt werden, die eine mögliche Quelle von elektrischer Störabstrahlung darstellen könnten. Sollten Probleme durch starke Störeinstrahlungen auftreten, sind zusätzliche Netzfilter oder Trenntransformatoren erforderlich.</li><li>Die Verdrahtung zu den E/A-Geräten sollten gekennzeichnet werden.</li></ul>         | <p><b>现场接线</b></p> <p>每个端子可使用单股线或绞合线。</p> <p>但是，进入每个端子的电线必须是相同的类型和尺寸。</p> <p><b>警告</b> 但是，进入每个端子的电线必须是相同的类型和尺寸。微型PLC必需接地以减少电击的危险，否则，有可能造成人员伤亡。接线时应计算每根电线的最大电流并遵守正确的接线操作规程，否则，有可能造成人员伤亡或设备损坏。</p> <p><b>警告</b> 在连接绞合导线时，应保证没有伸出的电线。裸露在外的电线有可能导致短路、设备的损坏或功能失灵。</p> <ul style="list-style-type: none"><li>所有接线应使用额定温度75° (167°) 的铜导线。每个端子可用一根AWG#14 (2.1平方毫米) 的铜导线或两根小一点的AWG#16 (1.30平方毫米) 到AWG#22 (0.36平方毫米) 的铜导线。</li><li>建议加在端子上的力矩为5.19英寸·磅 (6.11公斤·厘米)。</li><li>在进行现场接线之前，关掉PLC的电源。</li><li>所有弱信号电线应与其它现场接线分开。</li><li>直流电源线应与交流电源线分开。</li><li>现场接线不应靠近任何可能的电干扰源，如噪声问题严重，则可能需要另外的电源滤波器或隔离变压器。</li><li>连接到输入输出装置的电线必须用标签标明。</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

現場での配線

各端子に単線及びヨリ線を接続することができますが、端子に接続する線は同じ種類で同じサイズとして下さい。

**警告** 感電の危険を最低限に抑えるため、マイクロPLCには必ずアースを取り付けて下さい。怠ると、人に危害を及ぼす原因になります。

各線の最大電流を計算し、正しく配線されているか確認して下さい。怠ると人に危害を及ぼしたり、機材にダメージを与える原因になります。

ヨリ線を接続するときは、ヒゲがないことを確認して下さい。これらはショートを引き起こしたり、機材にダメージを与えたり、故障の原因になります。

- 全ての配線には75°C (167°F) に定められた銅導線を使用して下さい。1端子につきAWG#14 (2.1mm) 銅導線を1本、又は、AWG#16 (1.3mm) ~AWG#22 (0.36mm)銅導線2本を使用して下さい。
- 端子の締付トルクは5.19in-lbs (6.11kg-cm)をお勧めします。
- 配線を接続する前に、PLCの電源を切して下さい。6.11
- 低電圧の信号線は他の配線とは分離して下さい。
- AC電源配線はDC配線とは分離して下さい。
- 電氣的干渉の原因となり得る装置の近くには、配線しないで下さい。大きなノイズがある場合は電源に別途フィルターを入れるか、絶縁トランスが必要でしょう。
- 入出力につながるすべての線にラベルを付けて下さい。

**NOTE: All DC inputs can be connected as either positive or negative logic inputs. The example diagrams in this datasheet show positive logic connections.**

**Remarque** Toutes les bornes d'entrée DC (CC-courant continu) peuvent être connectées soit en logique positive soit en logique négative.

**Anmerkung** Die Eingänge können als Positive- oder Negative Logik verwendet werden.

**Nota** Tutti gli input possono essere collegati come logici positivi o negativi.

**Nota** Todas las entradas se pueden conectar ya sea en lógica positiva o negativa.

所有輸入端(11-18)均可以是正逻辑或负逻辑。  
DC in ユニットにおいて、すべての入力(11-18) は4点単位で正論理、負論理のどちらにも使用できます。

Suppression for Relay Outputs

Provide suppression across each inductive load being controlled.

Prévoyez des circuits de suppression pour chaque charge inductive.

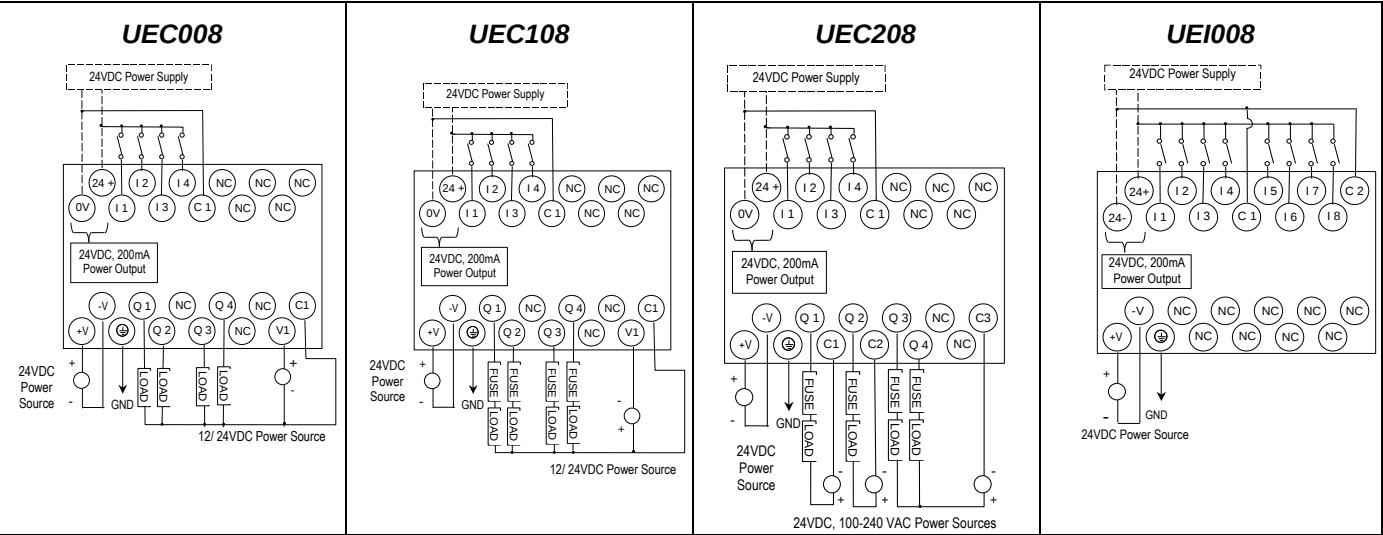
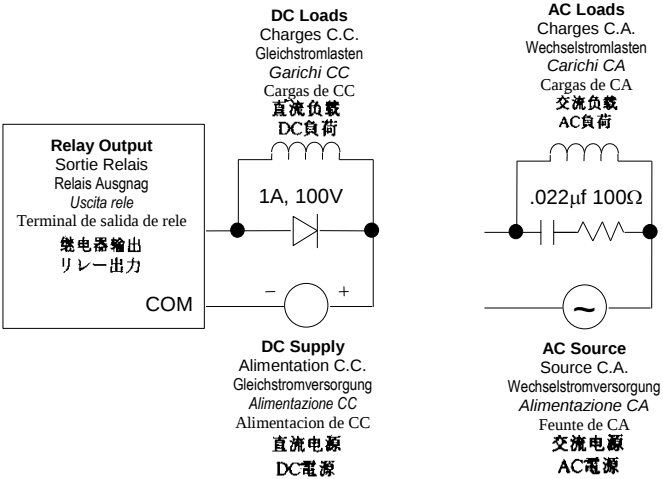
Über jede durch die Micro PLC gesteuerte induktive Last sollte für enie Unterdrückung gesorgt werden.

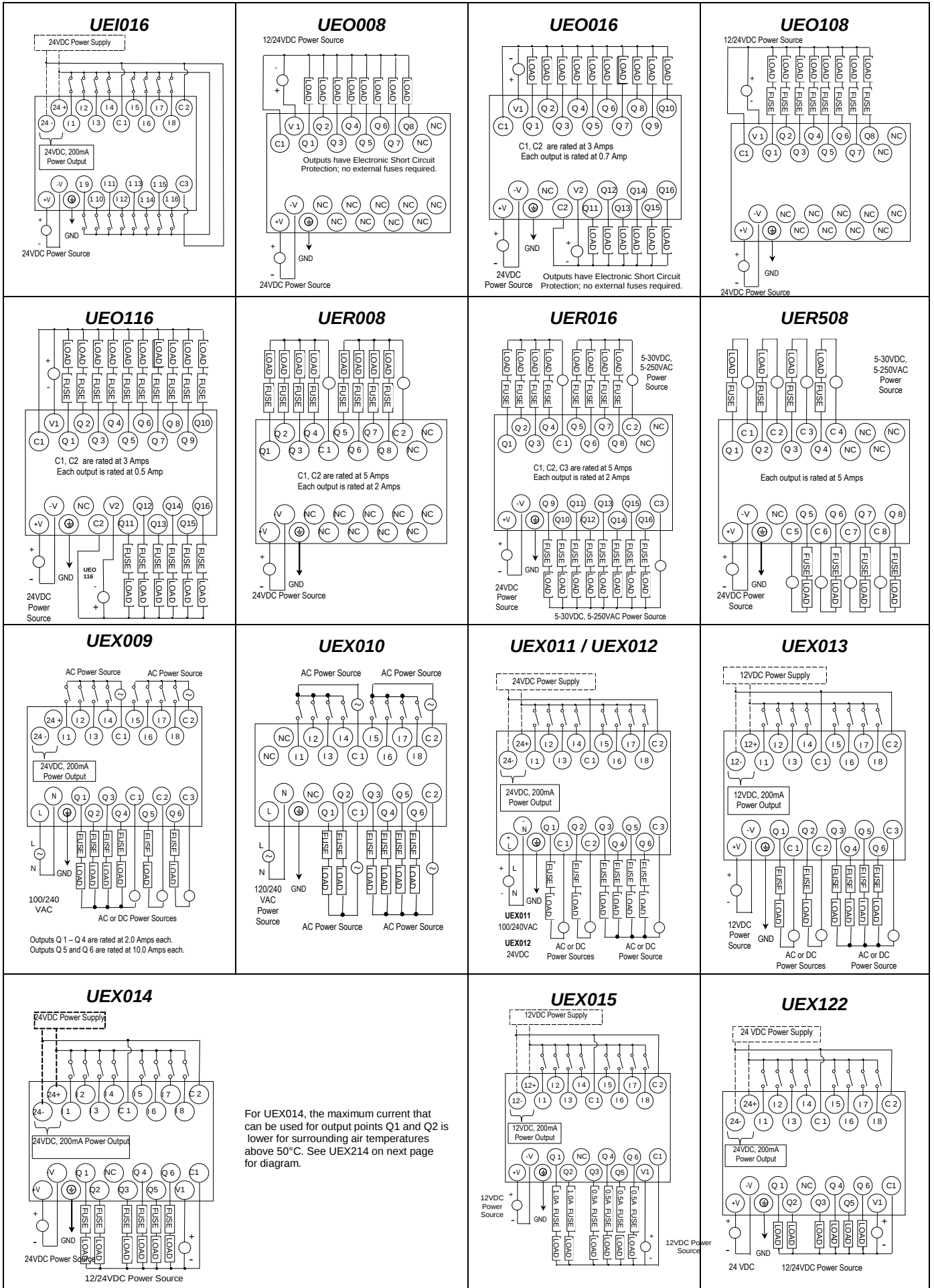
Fornite la soppressione attraverso ciascun carico induttivo.

Debe proveer de supresión para cada carga inductiva controlada.

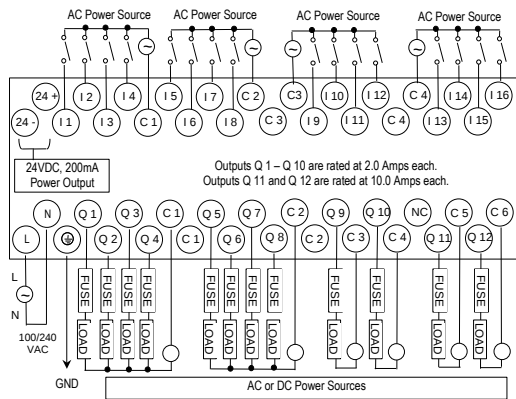
应通过由可编程宏控制器控制的感应负载提供抑制。

マイクロPLCが制御している誘導性負荷それぞれに抑制をかけて下さい。

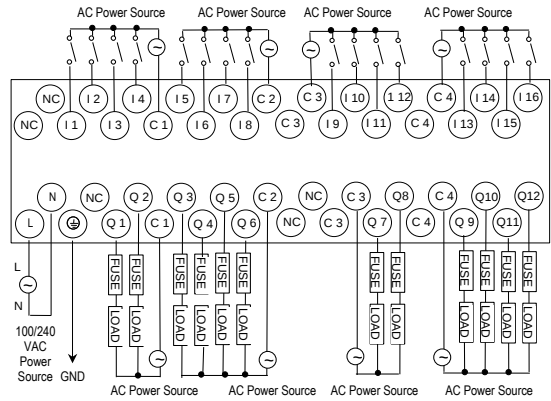




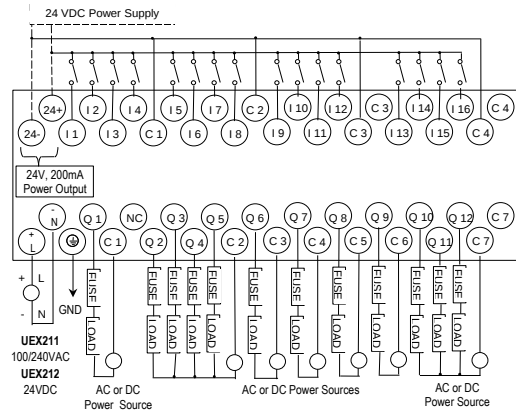
UEX209



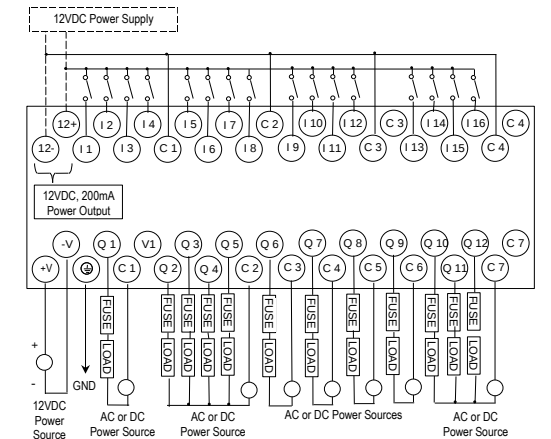
UEX210



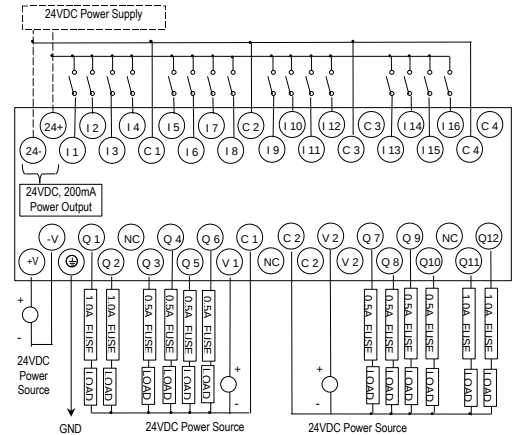
UEX211 / UEX212



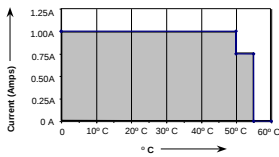
UEX213



UEX214

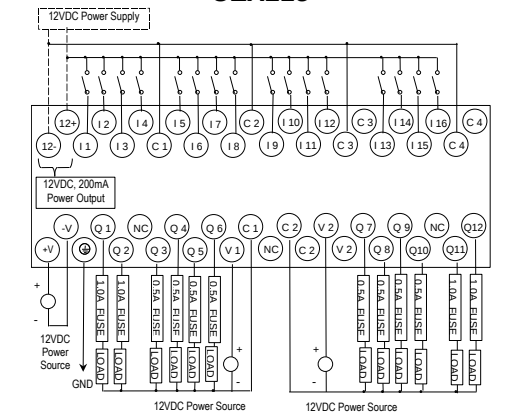


For model UEX214, the maximum current that can be used for output points Q1, Q2, Q11 and Q12 is lower for surrounding air temperatures above 50° C

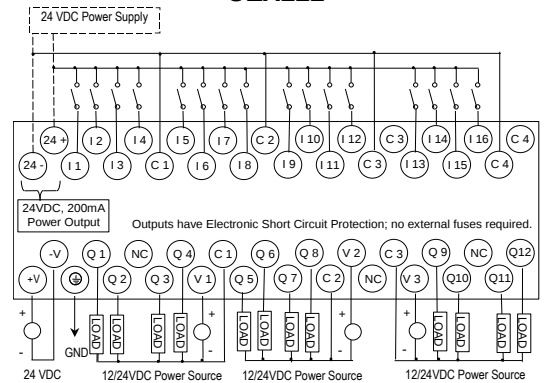


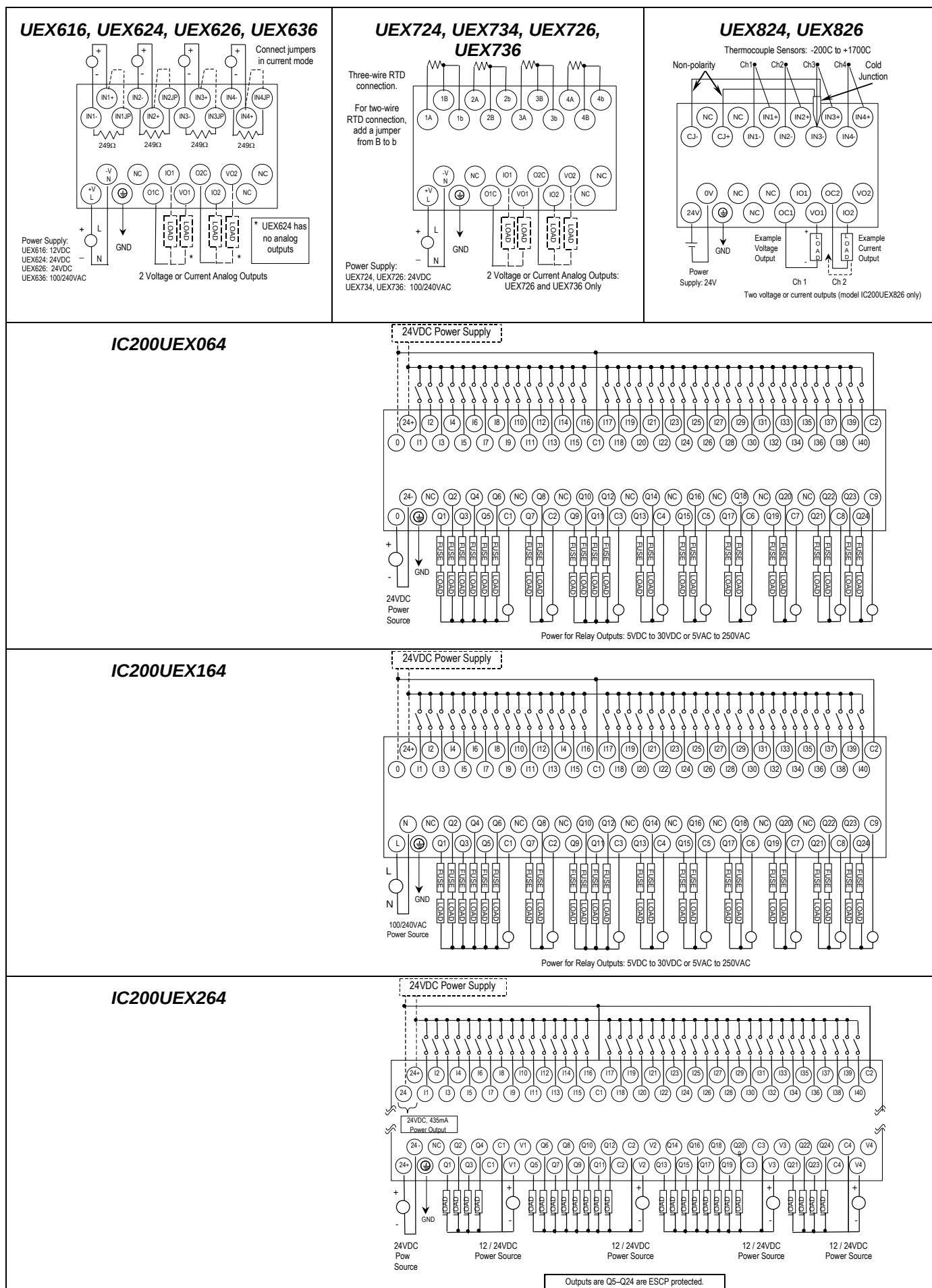
For model UEX014 (wiring diagram on page 5), the maximum current that can be used for output points Q1 and Q2 is lower for surrounding air temperatures above 50° C.

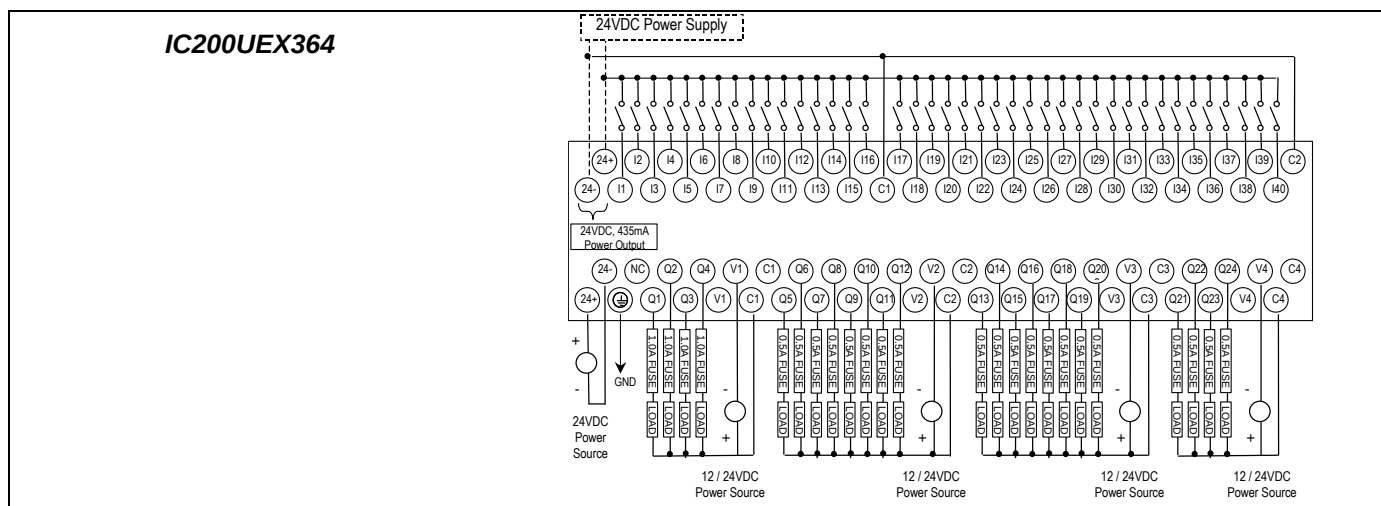
UEX215



UEX222







## Important Product Information

This release includes the following hardware changes:

- Adds support for the new 8-point IC200UER508 Expansion Module. The new module has eight 5-amp isolated relay outputs.

## Functional Compatibility

| Micro Expansion Unit                                                                                             | Minimum Version Required                                                                                                                                                                                                                                           |                          |                   |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------|
|                                                                                                                  | Micro PLC Firmware                                                                                                                                                                                                                                                 | Machine Edition Software | VersaPro Software |
| IC200UER508                                                                                                      | Same as IC200UER008, below.                                                                                                                                                                                                                                        |                          |                   |
| IC200UEX009, UEX011, UEX012, UEX013, UEX014, UEX015, UEX122                                                      | R1.00                                                                                                                                                                                                                                                              | 2.6                      | 1.11              |
| IC200UEX010                                                                                                      | R1.10                                                                                                                                                                                                                                                              | 2.6                      | 2.01              |
| IC200UEX209, UEX210, UEX211, UEX212, UEX213, UEX214, UEX215, UEX222, UEX616, UEX624, UEX626, UEX636              | R2.00                                                                                                                                                                                                                                                              | 2.6                      | 2.03              |
| IC200UEX724, UEX734, UEX726, UEX736                                                                              | R2.01                                                                                                                                                                                                                                                              | 2.6                      | 2.03              |
|                                                                                                                  | <b>Micro-20, -40, -64 CPUs:</b> R4.00 required for support of 16-bit (High Accuracy) mode.                                                                                                                                                                         |                          |                   |
|                                                                                                                  | <b>Programmer:</b> R.6.0 provides complete configuration support.                                                                                                                                                                                                  |                          |                   |
| IC200UEX824, UEX826                                                                                              | <b>Micro-20, -40, -64 CPUs:</b> R3.81<br>R4.00 required for support of 16-bit (High Accuracy) mode.                                                                                                                                                                |                          |                   |
|                                                                                                                  | <b>Micro-23, -28 CPUs:</b> R3.55<br><b>Micro-14 CPUs:</b> R3.56<br><b>Programmer:</b> R.6.0 provides complete configuration support.<br>With Logic Developer 5.70, configuration can be done using the method described under "Thermocouple Module Configuration." |                          |                   |
| IC200UEC008, UEC108, UEC208<br>IC200UEI008, UEI016<br>IC200UEO008, UEO016, UEO108, UEO116<br>IC200UER008, UER016 | Existing Micro CPUs support these expansion units. To configure these units with VersaPro, allow the CPU to autoconfigure the expansion units, and upload the configuration into VersaPro.                                                                         |                          |                   |
| IC200UEX064, IC200UEX164, IC200UEX264, IC200UEX364                                                               | <b>Micro-20, -40, -64 CPUs:</b> R4.00<br>Hardware versions –Bx and later.*                                                                                                                                                                                         |                          |                   |
|                                                                                                                  | <b>Programmer:</b> R.6.0 provides complete configuration support.                                                                                                                                                                                                  |                          |                   |

\* The suffix letters following CPU part numbers indicate the hardware version followed by the firmware version. Expansion units do not have firmware, so only the hardware version is indicated. Suffix A or AA indicates a new module.

- Old PME (prior to 6.0) and New Firmware (Rel 4.0 and later) with Thermocouple module in (12-bit) compatible mode**  
For Thermocouple modules, Sensor Type Selection cannot be configured using old PME and therefore must be done through DIP switch settings. With the new firmware, default Sensor Type Selection is done internally. The default selection always overwrites the DIP switch settings. Also Cold Junction Compensation Selection is enabled by default in the new firmware and cannot be disabled either through PME or through DIP switch settings.  
Even if configuration is cleared to trigger auto configuration, uploaded into PME and later downloaded into the PLC (with the Thermocouple module connected), DIP switch settings are overwritten.

- New PME (6.0 and above) and Old Firmware (Rel 4.0 and earlier) with Thermocouple module in compatible (12-bit) mode**  
Although new PME supports Thermocouple module configuration, either an RTD or analog expansion module must be used when configuring system with older firmware. If an attempt is made to download a PME configuration with Thermocouple module, the download is aborted with an error message in PME. Sensor configuration can be done only through DIP switch settings. The old firmware cannot send it internally. Also the Cold Junction Compensation Selection is enabled by default in firmware and cannot be disabled through PME or DIP switch settings.
- High Accuracy (16-bit) mode support for RTD/Thermocouple modules**  
High Accuracy (16-bit) mode of operation in RTD/Thermocouple modules is supported with the following versions: Micro firmware release 4.0 and above, and PME version 6.0 and above. If Micro firmware (and/or) PME is of earlier versions, 16-bit mode is not supported and the CPU Fault Table displays a Configuration Mismatch fault.

## Operating Notes

- Configuration with 8/16 Pt Expansion Modules:** When uploading a configuration from the CPU to the Programmer, some 8- and 16-point Expansion Units may show up in the configuration as other expansion modules, but with similar I/O sizes.
- Autoconfiguration of RTD and Thermocouple Modules:** If an RTD or Thermocouple expansion unit is autoconfigured, the PLC sees the module as an Analog expansion unit (IC200UEX616/626/636).
- Analog Expansion Unit, Loss of Subsequent Units:** When an analog, RTD, or Thermocouple expansion module fails, it drives a signal low, which causes the loss of all other expansion units in the system. Such a failure can also subsequently affect the operation of any discrete expansion units, should any of them later be powered down or configured again.
- DIP Switch Controls Analog Scaling Range:** DIP Switch 6 controls the maximum value for inputs and outputs on an analog expansion module, and for the analog outputs on RTD modules IC200UEX726 and UEX736.  
SW6: OFF  $\Rightarrow$  4096 (32767 counts = 10V)  
ON  $\Rightarrow$  4000 (32000 counts = 10V, 32767 counts = 10.23V)  
By default, DIP Switch 6 is set in the ON position (32000 counts = 10V). Setting switch 6 to ON has no effect on the operation of RTD inputs.
- Analog RTD/TC Expansion Unit PWR LED:** The PWR LED on an analog, RTD, or Thermocouple expansion unit remains on (lit dimly) when the unit is powered down separately from the CPU or other expansion units. This is due to current leakage in the expansion cable. For other type of expansion units, the PWR LED is on only when the unit is powered up.
- Analog/RTD/TC Voltage and Current Outputs are present simultaneously at the output terminals:** On an analog, RTD, or Thermocouple expansion unit with analog outputs, equivalent output signals are sent to BOTH the current and voltage output terminals at the same time, regardless of the selected output current or voltage mode. For proper module operation, be sure that connections are made only to the terminals (voltage or current) that correspond to the output configuration and DIP switch settings.
- Operation of Current Outputs from Analog or RTD Expansion Units for Micro-23 or Micro-28 CPU with Older Hardware Version (any Micro-23 or -28 model with hardware older than –C except model IC200UAL006 older than revision –D):** If the CPU is running release 3.55 firmware, 4-20mA current outputs on Analog or RTD expansion units will default to 0mA when the CPU enters Stop Faulted mode following a CPU watchdog timeout. This happens because the CPU clears the hardware configuration, which includes the 4-20mA setting.
- Analog/RTD/Thermocouple Module Configuration in Logic Developer:** When an inputs-only Analog/RTD/Thermocouple module (IC200UEX624/724/734/824) is physically connected to PLC, but the Logic Developer configuration is done for an Analog/RTD/Thermocouple module with Inputs + Outputs (IC200UEX616/626/636/726/736/826), there will not be any System Configuration Mismatch fault. The converse is also true.

## Thermocouple Module Configuration

Machine Edition 6.0, when used with firmware release 4.0 provides complete configuration support of the Thermocouple modules.

A Thermocouple module can be configured in Logic Developer version 5.70 by selecting the corresponding RTD module in the Module window.

| Thermocouple Module | Corresponding RTD Module |
|---------------------|--------------------------|
| IC200UEX824         | IC200UEX724              |
| IC200UEX826         | IC200UEX726              |

The Input Channel Mode for the Thermocouple channels can be configured as Celsius or Fahrenheit. The non-editable Input Channel Range values are for RTD modules only. They are not applicable to Thermocouple modules because the range depends on the type of sensor selected using the DIP switch settings.

The Output Channel Mode parameter can be used to configure the Voltage/Current values of a Thermocouple module.

- If the selection is Voltage, the Output Channel Range is not available.
- If the selection is Current, the Output Channel Range must be 0 to 20mA.

| Analog I/O Settings   Wiring |               |
|------------------------------|---------------|
| Parameters                   | Values        |
| Length:                      | 4             |
| Input Channel 1 Mode:        | Celsius       |
| Input Channel 1 Range:       | -100C, +600C  |
| Input Channel 2 Mode:        | Celsius       |
| Input Channel 2 Range:       | -100C, +600C  |
| Input Channel 3 Mode:        | Celsius       |
| Input Channel 3 Range:       | -100C, +600C  |
| Input Channel 4 Mode:        | Fahrenheit    |
| Input Channel 4 Range:       | -150F, +1050F |
| Reference Address:           | %AQ0015       |
| Length:                      | 2             |
| Output Channel 1 Mode:       | Voltage       |
| Output Channel 1 Range:      | N/A           |
| Output Channel 2 Mode:       | Current       |
| Output Channel 2 Range:      | 0,20 mA       |

## Thermocouple Module DIP Switch Settings

Machine Edition 6.0, when used with firmware release 4.0 provides complete configuration support of the Thermocouple modules. With the new firmware, the CPU's sensor selection overwrites the DIP switch settings.

Earlier versions of PME do not support Thermocouple sensor selection. The Cold Junction Compensation parameter is enabled by default in the new firmware and cannot be disabled either through older versions of PME or through DIP switch settings.

Even if configuration is cleared to trigger auto configuration, uploaded into PME and later downloaded into the PLC with the Thermocouple connected, DIP switch settings are overwritten.

- For DIP switch settings for use with earlier firmware releases, refer to the *VersaMax Nano/Micro PLC User's Manual*, GFK-1645.

## Installation in Hazardous Locations

### ENGLISH

**WARNING:** Explosion Hazard – Substitution of any components may impair suitability for Class I, Division 2.

**WARNING:** Explosion Hazard – Do not replace modules unless power has been switched off or the area is known to be non-hazardous.

**WARNING:** Explosion Hazard – Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

**WARNING:** Explosion Hazard – Do not connect or disconnect cable unless power has been switched off or the area is known to be non-hazardous.

**WARNING:** Fire, Explosion, and Severe Burn Hazard. Do not recharge, disassemble, heat above 212°F (100°C), incinerate, or expose contents to water.

**Recommendation:** If PLC is used in chemical environment, it could affect and degrade relay devices. It is recommended to inspect the sealed relay device periodically and to check for any degradation of the materials and to replace the complete product, not the sealed device, if any degradation is found.

## Installation sur des sites à risque

### FRANÇAIS

**ATTENTION:** Danger d'explosion - La substitution de quelque composant que ce soit peut diminuer la pertinence pour la Classe I, Division 2.

**ATTENTION:** Danger d'explosion - Ne pas remplacer les modules sauf si l'alimentation est déconnectée ou que le lieu est connu comme étant sans danger.

**ATTENTION:** Danger d'Explosion - Ne pas connecter ni déconnecter d'équipement sauf si l'alimentation est déconnectée ou que le lieu est connu comme étant sans danger.

**ATTENTION:** Danger d'explosion - Ne pas connecter ni déconnecter de câbles sauf si l'alimentation est déconnectée ou que le lieu est connu comme étant sans danger.

**ATTENTION:** Danger d'incendie, explosion et sévères brûlures. ne pas recharger, démonter, chauffer au dessus de 212°F (100°C), incinérer, ou exposer le contenu à l'eau.

**Recommandation:** Si l'automate est utilisé dans un environnement chimique, il peut affecter le comportement des relais voir les dégrader. Il est recommandé d'inspecter les relais périodiquement et vérifier la non dégradation de ceux-ci et de remplacer le produit complet en cas de détérioration.